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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/811,707

03/29/2004

Thomas D. Needham

POU920040025US1

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08/20/2008

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EXAMINER

VO, TED T

ART UNIT

PAPER NUMBER

2191

MAIL DATE

DELIVERY MODE

08/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/811,707	Applicant(s) NEEDHAM, THOMAS D.	
	Examiner TED T. VO	Art Unit 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the communication filed on 03/18/2008.

Claims 1, 3-10 are pending in the application.

Response to Arguments

2. All Applicants' arguments have been considered but moot in view of new ground rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1, 3-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Nelson, US Pat. No. 5,568,641.

As per claim 1: Nelson teaches

A non-disruptive method for replacing a first software module of a system with a second software module, the method comprising:

Copying, by a currently executing, first software module of a system, update control code from the currently executing, first software module to memory space outside a memory location at which the first software module is currently executing; (See FIG.2, Copy Primary boot code to an alternate block2. Alternate block2: “space outside a memory location”)

*replacing the currently executing, first software module with a second software module by storing the second software module in memory at a location which at least partially overlies the memory location at which the first software module was executing (See FIG.2, Erase and WRITE/UPDATE primary boot block: i.e. “replacing... second software module... at least partially overlies...”), wherein the replacing includes employing the update control code copied from the first software module to memory space outside the memory location from which the first software module was executing, and wherein the replacing includes executing the update control code copied from the first software module during the replacing of the first software module with the second software module (The processor of this upgrade mechanism using upgrade function that is required to perform an upgrade. See col. 3: Lines 35-43. It is obvious that this function is copied to the alternate block outside the primary boot block 0. This function is used by the processor for firmware replacement to the erased primary boot block 0 that was erased because this function contains the primary boot address space required for perform upgrade (see col. 4: lines 31-39); **and***

beginning execution of the second software module without resetting the system (The upgrade firmware (*second software module*) at the primary boot block is preformed first, therefore it does not need resetting the system).

As per claim 3: Nelson teaches *The method of claim 1, wherein the first software module comprises a firmware module, and the system comprises an embedded system, and wherein the replacing includes overlaying the memory location of the firmware module with the second software module, the second software module comprising an updated firmware module* (See FIG. 2).

As per claim 4: Nelson teaches *The method of claim 1, wherein the update control code includes update control code for monitoring replacing of the first software module with the second software module* (See col.3: Lines 35-43).

As per claim 5: Nelson teaches *The method of claim 4, wherein the update control code further includes control code for branching to an entry point of the second software module upon completion of the replacing to facilitate the beginning execution of the second software module* (see col. 2: “Summary of the invention”, see col. 4: lines 13-67, using XOR to looking alternate boot block 2 address space: *branching to an entry point*)

As per claim 6: Nelson teaches *The method of claim 1, wherein the first software module includes at least one of a loader and a linker, and wherein the replacing includes overlaying*

the memory location of the first software module with the second software module (See col.3: Lines 35-43).

As per claim 7: Nelson teaches *The method of claim 1, wherein the first software module and the second software module each comprise a single statically linked module* (i.e. “firmware”).

As per claim 8: Nelson teaches *The method of claim 1, further comprising storing data to be maintained during the replacing of the first software module to memory space outside the memory location of the first software module* (alternate boot block is out side the block 0).

As per claim 9: Nelson teaches *The method of claim 1, wherein the system comprises an embedded system, and the first software module and the second software module each comprise a firmware module* (It should be noted that this claim is a method, and intended to a system mentioned in the preamble. Thus, this claim remains rejected as the same for claim 1. Refer “system” to FIG. 1A).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson, US Pat. No. 5,568,641.

As per claim 10: Nelson teaches

The method of claim 1, wherein the replacing employs a hardware based direct memory access (DMA) operation to save the second software module to a target memory space and wherein the copying update control code comprises copying the update control code to memory space outside the target memory space, and wherein the update control code includes control code for determining when the DMA operation has completed and for branching to an entry point of the second software module upon completion of the DMA operation,

(see rationale in the claim 1), as the cause processor enters to an address space of the boot code in the alternate block during the time of firmware upgrading (See col. 3: line 62 to col. 4: line 67, particularly, using XOR to access to the address space of the alternate block that is used to store the boot code from the primary boot block).

Nelson does not address such accessibility is DMA. However, either using XOR or DMA, it is only changing ingredient. See MPEP, if the difference is merely changing or adding ingredient, then it cannot patentable distinction over a prior art. Moreover, DMA is only a common technique.

Therefore, it is obvious to ordinary in the art to alter or to add a common ingredient, i.e. an available technique, for achieving the same result for accessing to a memory as of prior.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be reached on 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708.

The facsimile number for the organization where this application or proceeding is assigned is the Central Facsimile number **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTV
August 08, 2008

/Ted T. Vo/
Primary Examiner, Art Unit 2191